

**STATE OF RHODE ISLAND
AND PROVIDENCE PLANTATIONS
DEPARTMENT OF HEALTH
Office of Drinking Water Quality**

Safe and Healthy Lives in Safe and Healthy Communities

The Honorable Donald L. Carcieri, Governor
Patricia A. Nolan, M.D., MPH, Director

Annual Compliance Report 2003

Office of Drinking Water Quality
June Swallow, PE, Chief
Contact List

Phone (401) 222-6867 Fax (401) 222-6953
Web Site: <http://www.health.ri.gov>

Topic	Staff Contact
Bacteria/Total Coliform Rule	Donna Pytel
Bottled Water	Bill Grant
Training and Outreach	Dana McCants
Consumer Confidence Reports	Dana McCants
Counterterrorism Planning	Charlotte Redner
Disinfection Byproducts	Doris Aschman, Sue Rabideau
Enforcement	Justin Blair
General Sampling Requirements	Donna Pytel
Inorganics	Donna Pytel
Inspections	Jim Scotland
Lead and Copper Rule	Romeo Mendes
Licensing	Romeo Mendes
Operator Certification	Romeo Mendes
Private Wells	Richard Amirault
Public Pools	Bill Grant
Radon/Radionuclides	Richard Amirault
Revolving Loan Fund	Gary Chobanian
Sample Collection Billing	Irene Cloutier
Source Water Protection	Clay Commons
Surface Water Treatment Rules	Doris Aschman, Sue Rabideau
Synthetic Organic Compounds	Donna Pytel
Treatment or Source Approval	Doris Aschman, Romeo Mendes

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Copies of this information are also available in braille, large print, audio cassette, and electronic file on computer disk. Contact the Department of Health, Drinking Water Quality, 3 Capitol Hill, Providence, RI 02908, phone number 222-7789, or Relay RI (TTY) at 1-800-745-5555.

OVERVIEW

The mission of the Department of Health is “*to prevent disease and to protect and promote the health and safety of the people of Rhode Island.*” In carrying out this mission, the Office of Drinking Water Quality is responsible for ensuring the quality of the state’s public drinking water supplies. The Office of Drinking Water Quality works closely with local water suppliers, other state and federal agencies, and various divisions within the Department of Health to ensure the safety of the state’s drinking water. The Department of Health’s Division of Laboratories, Office of Environmental Health Risk Assessment, Office of Occupational and Radiological Health, Division of Disease Prevention and Control, and the Office of Food Protection also play a role in ensuring the quality of the state’s drinking water.

The Department of Health considers drinking water protection to be an essential and fundamental public health program.

This report was written to educate the public about the ways the Department of Health maintains and improves the quality of the state’s drinking water and to highlight both the successes and challenges of the Department and local water suppliers in maintaining high-quality drinking water.

Public Drinking Water - 2003

The definition of a public water system is a system for the provision to the public of piped water for human consumption, provided such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Public water systems range in size from the Providence Water Supply Board, which serves about 500,000 residents, to small rural non-community transient systems, such as restaurants and convenience stores that utilize wells as their drinking water source. Fifty-six percent of the regulated water systems are food establishments with their own supply wells.

RHODE ISLAND DRINKING WATER FACTS

PERSONS SERVED BY PUBLIC WATER IN RHODE ISLAND	*1,051,625
Persons served by surface water systems	*839,627
Persons served by groundwater systems	*475,174
Number of public water systems in Rhode Island	474
Community Systems	83
Non-Transient Systems	74
Transient Systems	317
Number of systems using surface water	25
Number of systems using groundwater	**455

**Includes all populations, transient, residential, and workplace.*

***Some water systems use both ground and surface water (purchased/non-purchased).*

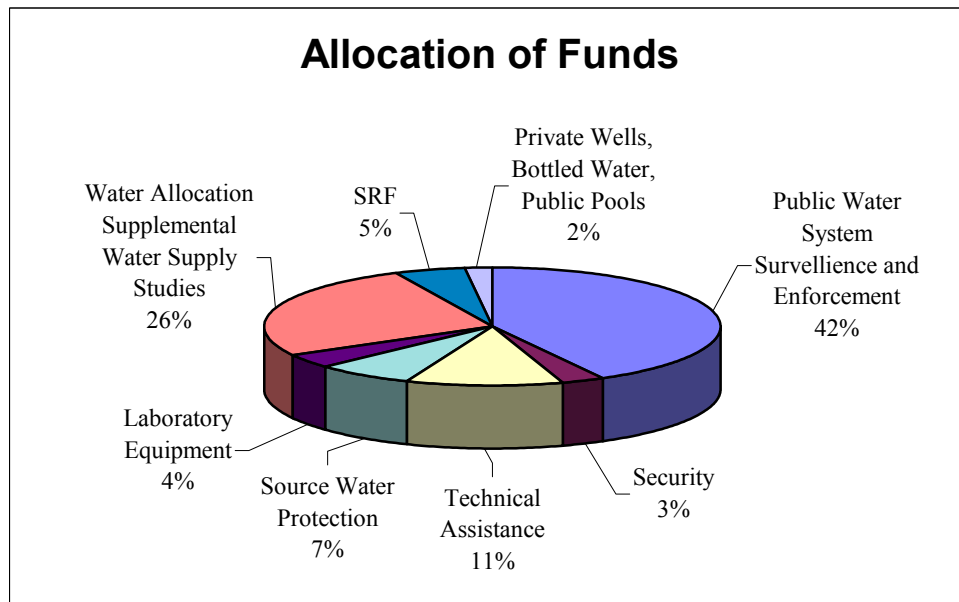
Table 1

Overall, the public water systems in Rhode Island have maintained a very good record of supplying high-quality, safe drinking water.

Program Budget

During 2003, the Office of Drinking Water Quality was staffed by 20 persons. The total budget for this office during this period was:

Federal Funding	\$ 2,971,540
State Funding	<u>487,862</u>
Total Budget	\$ 3,459,402



WATER QUALITY PROGRAMS

Ensuring the quality of the state's drinking water has placed many new demands on public drinking water systems. During 2003, the Office of Drinking Water Quality offered several programs to assist water systems with limited resources. We also continued to evaluate the sources of contamination and reasons for vulnerability of our drinking water supplies.

Counterterrorism Planning

The Office of Drinking Water Quality is working to support utilities as they strive to meet their security coordination challenges as well as meet the demands of the *Public Health Security and Bioterrorism Preparedness and Response Act of 2002*. To assist those systems in meeting the demands of this required legislation, several three-day training workshops were held in the summer of 2003 for key water utility personnel in the state. The workshops focused on: vulnerability assessment training, emergency response training, and a functional exercise. As follow-up to these trainings, the office hired a contract employee to both monitor the progress of each water system required to comply with the legislation as well as to provide direct assistance to the water systems. A total of 26 Community Water Systems in Rhode Island are required by this federal legislation to complete and submit vulnerability assessments to EPA Headquarters and update their Emergency Response Plans.

In addition, the Office of Drinking Water Quality is actively involved in a Rhode Island Department of Health initiative to achieve and maintain a coordinated departmental response capacity for public health emergencies that will integrate with other governmental agencies and the health care sector response. This has included the development of an emergency response plan for the office as well as incorporating the incident command system structure into the office's emergency response procedures.

Finally, the office is continually coordinating with EPA Region 1 and other non-profit organizations to conduct additional workshops and provide further information and guidance to the state's public water systems relating to the topics of water security, crisis communications and emergency response.

Public Swimming Pools

Public Swimming Pools are defined as "All traditional swimming pools, wading pools, and therapeutic pools owned or maintained by any person, partnership, association, corporation, city or town or state, except swimming pools maintained by an individual for the sole use of his or her household and guests without charge for administration and not for the purpose of profit or in connection with any business operated for the purpose of profit and except also swimming pools owned and maintained by the United States."

HEALTH ensures that public swimming pools are constructed and operated in a safe and sanitary manner. Inspections of the filtering system, water quality and other sanitary and safety concerns are performed routinely. In 2003, there were 179 licensed indoor pools and 219 licensed outdoor (seasonal) pools for a total of 398 licensed pools. There were 1368 analysis performed for bacterial count, residual chlorine and pH in which 9.2 % of the bacterial samples, 12.5 % of the residual chlorine samples and 7.6 % of the pH samples were in violation of the regulations.

Bottled Water

Bottled water is a food product and as such is regulated by the Food and Drug Administration (FDA), which defines bottled water as "water that is intended for human consumption and that is sealed in bottles or other containers with no added ingredients except that it may optionally contain safe and suitable antimicrobial agents." Bottled water may come from several sources: artesian water\artesian well water, drinking water, mineral water, purified water, sparkling water, spring water or well water.

Bottled water must adhere to the FDA's Quality Standards, Standards of Identity (Labeling Regulations) and Good Manufacturing Practices. Quality Standards include the annual chemical analysis to determine what, if any, contaminants are in the water. Standards of Identity (Labeling Regulations) established standard definitions of terms found on bottled water labels. Good Manufacturing Practices govern such areas as plant and ground maintenance, sanitary maintenance of the building, fixtures and plumbing.

In 2003, there were 111 out of state bottled water companies and 6 in state bottled water companies licensed by HEALTH. Prerequisites for obtaining a bottling permit are: submittal and approval of analytical data for the water source, label approval, satisfactory inspection reports and approval of a licensing application.

Private Wells

Legislation Passed Relating to Private Well Water Quality

On June 25, 2002, the Rhode Island Assembly passed legislation relating to the quality of drinking water from private wells. The legislation calls on HEALTH to set drinking water standards for private wells and promulgate regulations requiring testing of newly installed private drinking water wells beginning July 2003 and existing private wells at properties being sold after July 2006.

The regulations will help to close loopholes in the issuance of certificates of occupancy by town building departments, while allowing for extensions or exemptions where appropriate. Implementation of these regulations has been delayed due to a lack of funding.

Operator Certification

The State's efforts in implementing revised regulations were summarized in its second annual report to EPA region 1. The report provided updates on the classification of systems, facilities and operators, operator qualifications, enforcement, certification renewal, resources needed to implement the program, stakeholder involvement, program review, and overall implementation. Further detailed were the Drinking Water Operator Certification Board's ongoing review of the State's regulations including documentation of new proposed policies and resolution of all public water system and/or operator inquiries. The State realized its goal of 100% compliance as all community and non-transient non-community systems provided documentation that supervision by a certified operator of the appropriate class and grade had been accomplished.

Drinking Water State Revolving Fund

The Year 2003 saw DWSRF program momentum build with potential loans to the Pawtucket Water Supply Board (\$115,000,000) nearly finalized. HEALTH received confirmations from several public water systems of their intent to finance projects during the spring of 2003. Providence Water (\$2,000,000), North Tiverton Fire District (\$3,027,759) and Kingston Water District (\$200,000) have obtained Certificates of Approval for various projects that are expected to begin construction between March and April 2004.

As of December 2003, Rhode Island had received a total of \$51,210,500 representing its entire 1997 through 2002 federal capitalization grant awards. The State is planning to apply for its 2003 grant in the amount of \$8,004,100 in June of 2004. Portions of the grants are being used to fund non-construction project activities essential to ensure the quality of the State's drinking water supplies.

Capacity Development

Capacity Development refers to the ability of a Public Water System to meet the present and future needs of its customers for safe and clean drinking water. This ability is measured in three areas, Technical, Managerial and Financial. Technical improvements are funded by loans through the Drinking Water State Revolving Fund (DWSRF). Managerial and Financial improvements are supported through technical assistance and training.

Capacity Development efforts have been focused on assisting small water systems make improvements to provide quality drinking water to their customers and to remain in compliance. In order to accomplish this, the Office of Drinking Water Quality has established contracts with Atlantic States Rural Water & Wastewater Association, New England Water Works Association, and the University of Rhode Island Cooperative Extension. These vendors provide: training to small water systems operators for certification; assistance with preparing the Consumer Confidence Report; educational programs for municipal officials and the general public concerning drinking water issues; and a Circuit Rider to troubleshoot targeted water systems.

Source Water Assessment Plan

This program has identified the potential threats to the quality of sources of public drinking water, and will work to inform the public of the nature and severity of those threats. This one time assessment complements existing protection programs including the Wellhead Protection Program at DEM, and the Water Quality Protection Planning requirements of the Water Supply System Management Plans. Both surface and groundwater, community and non-community sources were assessed. All assessments were completed and distributed during 2003.

The ultimate goal of the Source Water Assessment Program is to promote the protection of public water supplies. Since land use control lies primarily with local government, HEALTH has contracted with the Cooperative Extension to conduct training workshops (under a contract in the Capacity Development program) to assist municipalities in incorporating the assessment results into their Comprehensive Community Plans.

We have printed assessment summaries for each system, which are available to the public, through the water systems as well as through public libraries, municipalities and HEALTH. Contact information is included in each assessment summary for access to further information.

Laboratory Services

The Rhode Island Department of Health continues to take an active role in assisting water systems with required water quality monitoring. ***The Department of Health currently collects and analyzes water quality samples for almost all of the state's 474 public water systems.*** The Department of Health Lab analyzed 6,605 samples, while the Office of Drinking Water Quality evaluated 23,833 samples. This testing not only ensures that each system complies with required monitoring, but more importantly, ensures the quality of the state's public drinking water.

Inspections

During 2003, the Department of Health, Office of Drinking Water Quality staff conducted Sanitary Survey inspections at 68 water systems serving a total of 79,202 people. These systems included 8 community water systems serving 65,315 people, 33 transient-non-community systems serving 6,846 people, and 27 non-transient, non-community systems serving 7,041 people.

Follow-up sanitary survey inspections were required at most all of these facilities to ensure that deficiencies were satisfactorily addressed. Additional inspections were conducted in direct response to requests for technical assistance from water systems. Survey personnel also performed conformance inspections of new construction or significant improvements in water system infrastructure.

DWQ inspection personnel used a portable GPS unit to determine the latitude and longitude of approximately 100 water system sources as required within EPA FRDS mandates.

Our goal is to perform a sanitary survey every three years for all community water systems using surface water or groundwater under the influence of surface water and every five years for all other systems. Additional periodic inspections are completed as necessary for systems that experience problems with water quality or capacity.

REGULATORY UPDATE

The Office of Drinking Water Quality regulates all public water systems in the state. This includes not only the major municipal water systems but also many other facilities such as schools, factories, restaurants, and day care centers, that have their own water supplies. During 2003, 474 public water systems were regulated by the Department of Health.

Federal Legislation/Regulations

The Safe Drinking Water Act Amendments of 1996 were signed on August 6, 1996. The passage of these Amendments is bringing substantial changes to the drinking water program for water suppliers and the State, as well as greater protection and information to the public. New rule-makings stemming from the amendments are or will affect every water system in the state.

Six new EPA rule-makings were promulgated by the Office of Drinking Water Quality during 2003. These were the rules for Stage 1 Disinfection By-Products, Filter Backwash Recycling, Interim Enhanced Surface Water Treatment and Long Term 1 Surface Water Treatment, Arsenic, and revisions to the Public Notice Rule. Quick Reference Guides for each of these rules have been incorporated into this report.

Radionuclides Rule Takes Effect

On December 8, 2003, the provisions of the National Primary Drinking Water Regulations; Radionuclides; Final Rule came into effect. The rule establishes a new MCL for Uranium and new rules for compliance and monitoring frequency determinations for the radionuclides parameters. All

Community Water Systems were sampled between June 2000 and December 2003 to provide grandfathered data to meet the initial monitoring requirements contained in the rule.

Rhode Island Legislation/Regulations

Another responsibility of the Office of Drinking Water Quality is to implement several key pieces of legislation which have been passed by the Rhode Island General Assembly in recent years to enhance the protection of water supplies. These include the Comprehensive Clean Water Infrastructure Act, Water Projects Revolving Loan Fund Act, and the Board of Certification of Operators of Public Water Supply Facilities Act.

Beyond those programs falling under the jurisdiction of the Health Department, the Office of Drinking Water Quality is involved in many coordinated efforts and regularly participates in workgroups with local, state, and federal agencies and other organizations. Personnel from the Office hold positions on the Water Resources Board, Wastewater Operator Certification Board, and the Drinking Water Operator Certification Board. Office personnel review and comment on Water Supply Management Plans and Comprehensive Land Use Management Plans.

COMPLIANCE

The compliance data in this section is for calendar year 2003. The 2003 Annual Compliance Report summary table, as required by the Safe Drinking Water Act amendments of 1996, can be found in Appendix A at the end of this document.

During calendar year 2003, 79 violations of the Safe Drinking Water Act were reported by 60 of the State's 474 public water systems. Of these 79 violations, 25 were monitoring violations, 52 were quality violations, and two were treatment technique violations. A summary of the violations is presented below in Table 2.

Monitoring Violations

Monitoring violations occur when a water system fails to perform the required monitoring for a particular contaminant within a specified time period. During 2003, 24 of the state's 474 water systems failed to perform the required monitoring within the specified time period. In all, 25 monitoring violations were reported.

Quality Violations

Quality violations occur when the monitoring results for a particular contaminant exceed the drinking water standard within a specific time period. Public water systems must monitor for 90 contaminants including inorganic compounds, volatile organic compounds, synthetic organic compounds, radionuclides, and pathogens. During 2003, 42 of the 474 public systems exceeded a drinking water standard for a total of 52 violations. Of those 52 violations, 47 were bacteriological violations, four exceeded the standard for total trihalomethanes (TTHMs), and one violation resulted from an exceedance of the standard for gross beta radioactivity.

Lead and Copper

To reduce the levels of lead and copper in our community and non-community non-transient public systems, the Lead and Copper Rule (LCR) and Lead and Copper Rule Minor Revisions (LCRMR) set specific requirements for monitoring, public education, corrosion control strategies and treatment including lead service line replacement.

Approximately 80 percent of the water systems regulated under the LCR have optimized their lead and copper levels. The remaining 20 percent are at various steps within the prescribed "treatment step" process or are conducting monitoring to optimize their treatment. During 2003, the State issued violations to only ten of the one hundred and fifty one systems required to comply with the Lead and Copper Rule (LCR) and Lead and Copper Rule Minor Revisions (LCRMR). The State will continue to focus as much technical assistance as necessary on systems triggered into the treatment step process in effort to achieve 100 percent optimization of lead and copper levels.

Table 2: Violation Summary

VIOLATIONS FOR CALENDAR YEAR 2003	# of Violations
<p><u>Community (83 systems)</u></p> <p>Quality: Central Beach (TCR) 1 Eleanor Slater/ Zamborano (MCL, DBPR) 2 Greenville Water District (TCR) 1 Hebert Nursing Home, Inc. (TCR) 3 Heritage Park Home Cooperative (MCL) 1 Narragansett - North End (TCR) 1 North Kingstown (Low Service) (TCR) 1 Portsmouth Water (MCL, DBPR) 2 Prudence Island Utility Corp. (TCR) 1 Quonochontaug East Beach (TCR) 2 South Kingstown – Middlebridge (TCR) 1 Split Rock Corp. (TCR) 1</p> <p>Treatment Technique: Newport Water Department (IESWTR) 1 Woodland Homeowner's Association (LCR) 1</p> <p>Monitoring: Cumberland Water Department (IESWTR) 1 Ninigret Realty (LCR) 1 Scituate Commons (LCR) 1 Tiverton Water Authority (TCR) 1 Woodpecker Hill Nursing Home (LCR) 1</p>	
<p><u>Non-Community Non-Transient (74 systems)</u></p> <p>Quality: Bruin Plastics (TCR) 1 Charbert, Inc. (TCR) 1 Greenwich Village Nursery (TCR) 1 South County Business Park (TCR) 2 Wright's Farm (TCR) 1</p> <p>Monitoring: Coventry Air National Guard (LCR) 1 Metech, Plant #1 (LCR) 1 North Smithfield Air National Guard (LCR) 1 Sakonnet Early Learning Center (LCR) 1 Scituate Village Shopping Center (LCR) 1 Sunrise Academy/ Camp Sunrise (LCR) 1</p>	

VIOLATIONS FOR CALENDAR YEAR 2003	# of Violations
<p style="text-align: center;"><u>Transient Non-Community (317 systems)</u></p> <p>Quality:</p> <p>Block Island Airport Operations (TCR) 1</p> <p>Burlingame-Main Camp (TCR) 1</p> <p>Camp Ayoho (TCR) 1</p> <p>Camp Jori (TCR) 2</p> <p>Camp Ker-Anna (TCR) 2</p> <p>Carousel Marketplace (TCR) 1</p> <p>Champlin Scout Reservation -U.P.H. (TCR) 1</p> <p>DB Mart, Store #50 (TCR) 1</p> <p>DB Mart, Store #9 (TCR) 1</p> <p>Dub's Enterprise, Inc. (TCR) 1</p> <p>East Greenwich Country Club (TCR) 1</p> <p>Episcopal Conference Center (TCR) 1</p> <p>Foster Country Club (TCR) 1</p> <p>Hog Island – South (TCR) 1</p> <p>Kilduff Brothers Builders (TCR) 1</p> <p>Kingston Road Associates (TCR) 1</p> <p>Lillymere Farms (TCR) 1</p> <p>Melody Hill Golf Course (TCR) 1</p> <p>Nickerson Community Center (TCR) 2</p> <p>Oak Knoll Associates (TCR) 1</p> <p>Payne's New Harbor Dock (TCR) 1</p> <p>St. Paul's the Apostle Church 1</p> <p>State Line Diner (TCR) 1</p> <p>Tower House Corporation (TCR) 1</p> <p>Townsmen Club, Inc. (TCR) 1</p> <p>Western Hills Extra Mart (TCR) 1</p> <p>Monitoring:</p> <p>Arrowhead Dental (TCR) 1</p> <p>Camp Ayoho (TCR) 1</p> <p>Coventry Pines Golf Course (TCR) 1</p> <p>F.A. Simmons Country Store (TCR) 1</p> <p>Fredrick J. Benson Town Beach (TCR) 1</p> <p>Gentleman Farmer Restaurant (TCR) 1</p> <p>Kingston Pizza of Narragansett (TCR) 1</p> <p>Neighborhood Variety (TCR) 1</p> <p>Ninigret Inn (TCR) 1</p> <p>Old Victory Square Diner (TCR) 1</p> <p>RI Sports Center (TCR) 2</p> <p>Richmond Town Hall (TCR) 1</p> <p>Sal's Pizza (TCR) 1</p>	
Total Violations:	79

Notes: TCR – Total Coliform Rule
 LCR – Lead and Copper Rule
 MCL – Maximum Contaminant Level
 DBPR – Disinfection Byproducts Rule
 IESWTR – Interim Enhanced Surface Water Treatment Rule

Treatment of Surface Water

The Surface Water Treatment Rules established filtration and disinfection treatment requirements for the control of pathogens for all public water supplies that utilize surface water sources or ground water under the influence of surface water. The state of Rhode Island requires filtration for all systems that utilize surface water.

The Surface Water Treatment Rule (SWTR) covers four systems that treat surface water and serve less than 10,000 people. During the year 2003, all four systems met the turbidity and disinfection

performance criteria required by the SWTR, including 1) filtered water turbidity levels less than or equal to 0.5 NTU in 95% of the measurements taken every month, 2) no single filtered water turbidity reading exceeding 5 NTU, 3) attainment of 3-log and 4-log removal/ inactivation of Giardia and viruses respectively, 4) compliance with the minimum required disinfectant residual in the water entering the distribution system and 5) detectable disinfectant residuals or compliance with maximum levels of heterotrophic bacteria in at least 95 percent of the samples from the distribution system each month.

The SWTR also requires 15 systems that are secondary sellers of surface water to maintain a chlorine residual throughout their distribution systems. All these systems complied with the SWTR requirement in 2003.

The Interim Enhanced Surface Water Treatment Rule (IESWTR) covers the five Rhode Island surface water systems that serve more than 10,000 people. The IESWTR builds on the requirements of the SWTR, adding provisions that include 1) 2-log removal of cryptosporidium, 2) strengthened turbidity requirements (turbidity levels must be less than 0.3 NTU in at least 95% of the monthly measurements and no single reading may exceed 1 NTU), and 3) continuous individual filter monitoring. In 2003 all systems remained in compliance with this rule.

Reduction of Disinfection Byproducts (DBPs)

The Stage 1 Disinfectants and Disinfection Byproducts Rule (Stage 1 DPBR) is the first of a staged set of rules that will reduce the allowable levels of DBP's in drinking water. In 2003, the six community systems selling surface water to more than 10,000 people and add a disinfectant to the water were regulated by this rule. Requirements include: 1) limiting residual disinfectant levels in the distribution system for chlorine to 4.0 mg/l and chlorine dioxide to 0.8 mg/l, 2) reducing the allowable levels of disinfection byproducts for Total Trihalomethanes to 0.080 mg/l, five Haloacetic Acids to 0.060 mg/l and chlorite to 1.0 mg/l and 3) setting minimum requirements for the removal of disinfection byproduct precursors (measured as Total Organic Carbon).

During 2003, two of these community public water systems failed to meet the requirements of the Stage 1 DPBR resulting in one monitoring violation and one treatment technique violation. The first violation resulted from failure to monitor removal of Total Organic Carbon (TOC), and the other resulted from an exceedance of the standard for Total Trihalomethanes (TTHMs).

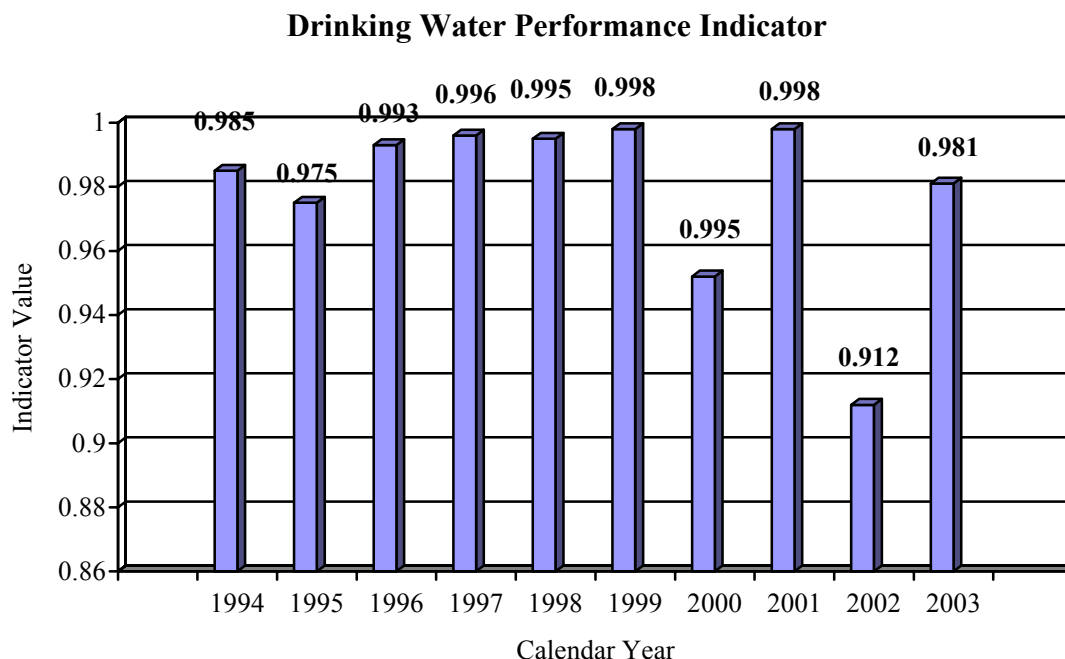
Nine water systems were regulated for disinfection byproducts under the Unregulated Organic Chemicals Rule. One system exceeded the interim standard of 0.100 mg/l for TTHM's in 2003.

OVERALL PERFORMANCE

Of all the requirements with which water systems are expected to comply, the most important is meeting minimum health standards. Each year, the Department of Health evaluates the progress of the State's individual water systems as well as Rhode Island's Drinking Water Program in meeting these minimum health standards. In making this evaluation, the Department of Health uses a "performance indicator value," based on compliance with Safe Drinking Water Act requirements for the entire year. The indicator value, shown below, is based on compliance with maximum contaminant levels (MCLs) and treatment technique requirements. To make the indicator more representative of the state's drinking water quality, it is weighted by the number of days the system operated in compliance, the population served by the water system, and the total number of days that the system was actually in

operation. An indicator value of 1.0 would mean that all public water systems were in compliance with every MCL and treatment technique requirement for the entire year.

On January 1, 2002, several new EPA treatment technique regulations were adopted by the larger systems (>10,000 served) in Rhode Island. The new regulations included running annual averages of certain target analytes. Exceedances of these running annual averages resulted in non-compliance for the entire year for three of our community systems. The resulting lowered performance indicator value for the 2002 calendar year reflected these additional burdens put on our larger systems. In 2003, these systems adjusted their operation so as to return to compliance and the indicator value improved.



$$\text{Indicator Value} = \frac{\sum (\text{PWS Population Served}) \times (\text{Days in Compliance With MCLs and Treatment Technique Requirements})}{\sum (\text{PWS Population Served}) \times (\text{Total Days in Operation})}$$

LOOKING AHEAD

The public demands drinking water of the highest quality feasible. As our analytical and technical capabilities become more sophisticated, the public's expectations increase. The continued provision of safe drinking water is becoming more expensive and technically more demanding. Public water systems will need to ensure adequate financial, technical, and managerial resources so that they will be able to continue providing water which meets these expectations.

The Department of Health will be administering several technical assistance contracts to assist water suppliers in their efforts to achieve this goal: activities included in these contracts are: general training of water suppliers, writing Consumer Confidence Reports for all systems serving less than 10,000 people, providing on-site technical or financial/managerial assistance, and providing training to municipal officials responsible for water systems and outreach to communities in their efforts to protect sources of drinking water.

Significant challenges for Rhode Island's water suppliers and the Department of Health during the coming year will be: continued implementation of the new Long-Term Enhanced Surface Water Treatment Rule and the Stage 1 Disinfectants and Disinfection Byproducts Rule.

A longer-term challenge will be to navigate the sweeping regulatory changes that are presently being proposed and finalized by EPA. Both groundwater and surface water supplies will be affected. Water suppliers are urged to learn about proposed rules as soon as possible, attend training on these rules when available, and participate in EPA's rule-making process.

For the last several years, the Department of Health has been engaged in counter-terrorism planning. In the coming year, with continued funding from the Environmental Protection Agency and the Center for Disease Control, the Department of Health will provide training and technical assistance for water system emergency response planning and enhance many other aspects of the Office's emergency preparedness and response/prevention capabilities.

The public water systems in Rhode Island have maintained a very good record in providing high-quality, safe drinking water, but continued success will require renewed dedication. It will be an interesting and demanding year.

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DEPARTMENT OF HEALTH
Office of Drinking Water Quality

Appendix A
Compliance Table

State: Rhode Island

Reporting Interval: January 1, 2003 through
December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Organic Contaminants							
2981	1,1,1-Trichloroethane	0.2	0	0			0	0
2977	1,1-Dichloroethylene	0.007	0	0			0	0
2985	1,1,2-Trichloroethane	.005	0	0			0	0
2378	1,2,4-Trichlorobenzene	.07	0	0			0	0
2931	1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0	0			0	0
2980	1,2-Dichloroethane	0.005	0	0			0	0
2983	1,2-Dichloropropane	0.005	0	0			0	0
2063	2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁸	0	0			0	0
2110	2,4,5-TP	0.05	0	0			0	0
2105	2,4-D	0.07	0	0			0	0
2051	Alachlor	0.002	0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2003 through
December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2050	Atrazine	0.003	0	0			0	0
2990	Benzene	0.005	0	0			0	0
2306	Benzo[a]pyrene	0.0002	0	0			0	0
2046	Carbofuran	0.04	0	0			0	0
2982	Carbon tetrachloride	0.005	0	0			0	0
2959	Chlordane	0.002	0	0			0	0
2380	cis-1,2-Dichloroethylene	0.07	0	0			0	0
2031	Dalapon	0.2	0	0			0	0
2035	Di(2-ethylhexyl)adipate	0.4	0	0			0	0
2964	Dichloromethane	0.005	0	0			0	0
2041	Dinoseb	0.007	0	0			0	0
2032	Diquat	0.02	0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2003 through
December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2033	Endothall	0.1	0	0			0	0
2005	Endrin	0.002	0	0			0	0
2257	Epichlorohydrin				0	0		
2992	Ethylbenzene	0.7	0	0			0	0
2946	Ethylene dibromide	0.00005	0	0			0	0
2034	Glyphosate	0.7	0	0			0	0
2065	Heptachlor	0.0004	0	0			0	0
2067	Heptachlor epoxide	0.0002	0	0			0	0
2274	Hexachlorobenzene	0.001	0	0			0	0
2042	Hexachlorocyclopentadiene	0.05	0	0			0	0
2010	Lindane	0.0002	0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2003 through
December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2015	Methoxychlor	0.04	0	0			0	0
2989	Monochlorobenzene	0.1	0	0			0	0
2968	o-Dichlorobenzene	0.6	0	0			0	0
2969	para-Dichlorobenzene	0.075	0	0			0	0
2383	Total polychlorinated biphenyls	0.0005	0	0			0	0
2326	Pentachlorophenol	0.001	0	0			0	0
2987	Tetrachloroethylene	0.005	0	0			0	0
2996	Styrene	0.1	0	0			0	0
2991	Toluene	1.0	0	0			0	0
2979	trans-1,2-Dichloroethylene	0.1	0	0			0	0
2955	Xylenes (total)	10	0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2003 through
December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2020	Toxaphene	0.003	0	0			0	0
2036	Oxamyl (Vydate)	0.2	0	0			0	0
2040	Picloram	0.5	0	0			0	0
2037	Simazine	0.004	0	0			0	0
2976	Vinyl chloride	0.002	0	0			0	0
	Subtotal		0	0			0	0
	Stage 1 Disinfectant Byproducts Rule							
1009	Chlorite	1.0	0	0			0	0
1011	Bromate	0.010	0	0			0	0
1006	Chloramines	4.0	0	0			0	0
1008	Chlorine Dioxide	0.8	0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2003 through

December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
0999	Chlorine	4.0	0	0			0	0
2950	Total Trihalomethanes (Section 7.0 systems)	0.08	2	1			0	0
2950	Total Trihalomethanes (Section 16.2(a) systems)	0.10	2	1			0	0
2456	Total Haloacetic Acids	0.06	0	0			0	0
	Subtotal		4	2			0	0
	Unregulated Contaminants Monitoring Rule							
2009	4,4 - DDE		0	0			0	0
2027	Acetochlor		0	0			0	0
2052	EPTC		0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2003 through
December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2066	2, 6 - Dinitrotoluene		0	0			0	0
2270	2, 4 - Dinitrotoluene		0	0			0	0
2272	Terbacil		0	0			0	0
2626	Molinate		0	0			0	0
2108	DCPA		0	0			0	0
2251	MTBE		0	0			0	0
2254	Nitrobenzene		0	0			0	0
	Subtotal		0	0			0	0
	Inorganic Contaminants							

State: Rhode Island

Reporting January 1, 2003 through

Interval: December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
1074	Antimony	0.006	0	0			0	0
1005	Arsenic	0.05	0	0			0	0
1094	Asbestos	7 million fibers/l □ 10 □m long	0	0			0	0
1010	Barium	2.0	0	0			0	0
1075	Beryllium	0.004	0	0			0	0
1015	Cadmium	0.005	0	0			0	0
1020	Chromium	0.1	0	0			0	0
1024	Cyanide (as free cyanide)	0.2	0	0			0	0
1025	Fluoride	4.0	0	0			0	0
1035	Mercury	0.002	0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2003 through

December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
1040	Nitrate	10 (as Nitrogen)	0	0			0	0
1041	Nitrite	1 (as Nitrogen)	0	0			0	0
1045	Selenium	0.05	0	0			0	0
1085	Thallium	0.002	0	0			0	0
1038	Total nitrate and nitrite	10 (as Nitrogen)	0	0			0	0
	Subtotal		0	0			0	0
	Radionuclide MCLs							
4000	Gross alpha	15 pCi/l	0	0			0	0
4010	Radium-226 and radium-228	5 pCi/l	0	0			0	0

State: Rhode Island

Reporting Interval: January 1, 2003 through

December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
4101	Gross beta	4 mrem/yr	1	1			0	0
	Subtotal		1	1			0	0
	Total Coliform Rule							
21	Acute MCL violation	Presence	4	4				
22	Non-acute MCL violation	Presence	43	37				
23,25	Major routine and follow up monitoring						15	14
28	Sanitary survey ⁱⁱ						0	0
	Subtotal		47	41			15	14
	Surface Water Treatment Rule							

State: Rhode Island

Reporting Interval: January 1, 2003 through

December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
36	Monitoring, routine/repeat						0	0
41	Treatment techniques				1	1		
	Unfiltered Systems							
31	Monitoring, routine/repeat						1	1
42	Failure to filter				0	0		
	Subtotal				1	1	1	1
	Lead and Copper Rule							
51	Initial lead and copper tap M/R		0	0			0	0
52	Follow-up or routine lead and copper tap M/R		0	0			9	9

State: Rhode Island

Reporting Interval: January 1, 2003 through
December 31, 2003

SDWIS Codes		MCL (mg/l) ⁱ	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
58,62	Treatment Installation				1	1		
65	Public education				0	0		
	Subtotal		0	0	0	0	9	9
	Consumer Confidence Reports (CCR)							
71	CCR Complete failure to report				0	0	0	0
	Subtotal						0	0
Totals			52	42	2	2	25	24

1. Values are in milligrams per liter (mg/l), unless otherwise specified.

2. Number of major monitoring violations for sanitary survey under the Total Coliform Rule.

Definitions for Violations Table

The following definitions apply to the Summary of Violations table.

Filtered Systems: Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

Inorganic Contaminants: Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. EPA has established MCLs for 15 inorganic contaminants [40 CFR 141.62].

Lead and Copper Rule: This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following six categories:

Initial lead and copper tap M/R: SDWIS Violation Code 51 indicates that a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

Follow-up or routine lead and copper tap M/R: SDWIS Violation Code 52 indicates that a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

Treatment installation: SDWIS Violation Codes 58 AND 62 indicate a failure to install optimal corrosion control treatment system (58) or source water treatment system (62) which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in these two categories].

Public education: SDWIS Violation Code 65 shows that a system did not provide required public education about reducing or avoiding lead intake from water.

Maximum Contaminant Level (MCL): The highest amount of a contaminant that EPA allows in drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

Monitoring: EPA specifies which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system that does not follow EPA's schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

Organic Contaminants: Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland or discharge from factories. EPA has set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

Radionuclides: Radioactive particles which can occur naturally in water or result from human activity. EPA has set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

Gross alpha: SDWIS Contaminant Code 4000 for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.

Combined radium-226 and radium-228: SDWIS Contaminant Code 4010 for combined radiation from these two isotopes above MCL of 5 pCi/L.

Gross beta: SDWIS Contaminant Code 4101 for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

Reporting Interval: The reporting interval for violations to be included in the first PWS Annual Compliance Report, which is to be submitted to EPA by January 1, 1998, is from July 1, 1996 through June 30, 1997. This interval will change for future annual reports. See guidance language for these intervals.

SDWIS Code: Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

Surface Water Treatment Rule: The Surface Water Treatment Rule establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the “Surface Water Treatment Rule” are to be reported for the following four categories:

Monitoring, routine/repeat (for filtered systems): SDWIS Violation Code 36 indicates a system’s failure to carry out required tests, or to report the results of those tests.

Treatment techniques (for filtered systems): SDWIS Violation Code 41 shows a system’s failure to properly treat its water.

Monitoring, routine/repeat (for unfiltered systems): SDWIS Violation Code 31 indicates a system’s failure to carry out required water tests, or to report the results of those tests.

Failure to filter (for unfiltered systems): SDWIS Violation Code 42 shows a system’s failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.

Total Coliform Rule (TCR): The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

Acute MCL violation: SDWIS Violation Code 21 indicates that the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.

Non-acute MCL violation: SDWIS Violation Code 22 indicates that the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

Major routine and follow-up monitoring: SDWIS Violation Codes 23 AND 25 show that a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

Sanitary Survey: SDWIS Violation Code 28 indicates a major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

Treatment Techniques: A water disinfection process that EPA requires instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

Unfiltered Systems: Water systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

Violation: A failure to meet any state or federal drinking water regulation.